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        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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TENPCAQRCLQSCQQEPDDLKQKACESRCTKLEYDPRCVYDTGATNQRHPPGERTRGRQP 	h 100. Similarity 100. 60; Conservative	EMBL; L38853; AAA60336.1; HSSP; P50477; 1CAW. INTERPRO; IPR001113; PFAM; PF00546; Seedstore_ Allergen. Allergen. 614 AA; 70283	SWISS-PROT entry is copyright. It is peen the Swiss Institute of Bioinformat uropean Bioinformatics Institute. The by non-profit institutions as long led and this statement is not removed. ies requires a license agreement (See ies requires a license edisb-sib.ch).	SEQUENCE FROM N.A. SEQUENCE FROM N.A. STRAIN=CV. FLORUNNER; MEDLINE=96013631; pubMed=7560062; Burks A.W., Cockrell G., Stanley J.S., "Recombinant peanut allergen Ara h I e patients with peanut hypersensitivity. J. Clin. Invest. 96:1715-1721(1995)i- SIMILARITY: TO 75 SEED STORAGE PRO CONVICILIN, CONGLYCININ, ETC.).	5 (Rel. 5 (Rel. 7 (Rel. 7 (Rel. RA H 1, pogaea Viridij yta; eu	STANDARD;	16.6.6 16.6.3 16.3.3 16.3.3 16.3.3 16.3.3 16.3.3 16.3.3
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                                                                                                                                                                                 Glycine max (Soybean).
Eukaryota; Viridiplantae; Embr
Magnoliophyta; eudicotyledons;
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01-AUG-1992 (Rel. 23, Last annotation
BETA-CONGLYCININ, ALPHA' CHAIN PRECURS
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SEQUENCE
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between
                                          MEDLINE-83143289; Pu
Schuler M.A., Ladin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. The use by non-profit institutions as not removed modified and this statement is not removed. entities requires a license agreement (See Jorsend an email to license@isb-sib.ch).
                                                                                   "The glycosylated seed vulgaris. Structural ho J. Biol. Chem. 261:9228
                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-86250867;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            patients with peanut hypersensitivity.";
J. Clin. Invest. 96:1715-1721(1995).
-!- SIMILARITY: TO 7S SEED STORAGE PROTEINS
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Eukaryota; Viridiplantae; Embr
Magnoliophyta; eudicotyledons;
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                      alpha, alpha'
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Nucleic
                                Schuler M.A., Ladin B.
"Structural sequences
                                                                 SEQUENCE OF
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PFAM; PF00546;
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adin B.F., Pollaco J.C.
nuences are conserved i
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CARBOHYD
CONFLICT
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                                                              Plant
                                                                                                     Sebastiani F.L., Farrel L.B., Schuler
"Complete sequence of a cDNA of alpha
conglycinin.";
                                                                                                                                                                                                                                                          Glycine max (Soybean).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
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EMBL; J01290; -; NOT_ANNO;
PIR; B24810; B24810.
HSSP; P02853; 2PHL.
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                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                 TISSUE=COTYLEDON;
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                    FUNCTION: SEED STORAGE PROTEIN. ACCUMULATES DURING DEVELOPMENT AND IS HYDROLYZED AFTER GERMINATION TO CARBON AND NITROGEN SOURCE FOR THE DEVELOPING SEEDI
                                                          runction: SEED STORAGE PROTEIN.
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N-LINKED (GLCWAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

P -> L (IN REF. 2).

M -> V (IN REF. 2).

S -> T (IN REF. 2).
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  AND
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RESULT 5
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Best Local S
Matches 22
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CARBOHYD
SEQUENCE
                                                                                                                                                  SEQUENCE
Woessner
SEQUENCE OF 39-182 FROM N.A.

ROHLFLING T., Tin-Wollam A.M., Duckels G.;

Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.

-I- FUNCTION: INDUCES THE COLLAPSE AND PARALYSIS OF NEURONAL GROWTH

COMES. COULD SERVE AS A LIGAND THAT GUIDES SPECIFIC GROWTH CONES

BY A MOTILITY-INHIBITING MECHANISM. BINDS TO THE COMPLEX

NEUROPILIN-1/PLEXIN-1 (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                               30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
SEMAPHORIN 3A PRECURSOR (SEMAPHORIN III) (SEMA
                                                                                                                                 Woessner J., Minx P., Hi
Submitted (MAR-1998) to
                                                                                                                                                                                                               Kolodkin A.L., Matthes D.J., Goodman (
"The semaphorin genes encode a family growth cone guidance molecules.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SM3A_HUMAN
Q14563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                 MEDLINE=94094332;
                                                                                                                                                                                                                                                                                  TISSUE=FETAL
                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
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Seed storage protein; Signal;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S14681;
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22; Conser
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1 22
23 62
3 605
3 261
517
70293 M<sup>2</sup>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PGER
                                                                                                                                                                  1-37 FROM
                                                                                                                                                                                                                                                                                  M N.A.
BRAIN;
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                                                                                                                                                                                                                                                                                                                                                                     (Human).
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Pred. No. 0.00
8; Mismatches
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                                                                                                                                 K., Strowmatt C.;
EMBL/GenBank/DDBJ
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.; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BETA-CONGLYCININ, ALPHA CHAIN.
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CBEBA30506BBBC57 CRC64;
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AXIS, AND COTYLEDONARY MEMBRANE-BOUND
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transmembrane and
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                                                                                                                                                                                                                                                                                                                                 Hominidae;
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Best Local
                                                                                                                                                                                                                                                         VCLA_GOSHI
P09799;
01-MAR-1989
           This SWI
between
                                                                                      Chlan C.A., Borroto K., Kamalay J.A., Dure L. III; "Developmental biochemistry of cottonseed embryogenesis germination. XIX. Sequences and genomic organization of globulin (vicilin) genes of cottonseed."; Plant Mol. Biol. 9:533-546(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; L26081;
EMBL; AC00445
EMBL; AC00484
MIM; 603961;
                                                                                                                                                                                                                         01-MAR-1989 (Rel. 10, Created)
01-MAR-1989 (Rel. 10, Last sequence updat
15-JUL-1999 (Rel. 38, Last annotation upc
VICILIN GC72-A PRECURSOR (ALPHA-GLOBULIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                       Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
                                                                                                                                                                                                               Gossypium hirsutum (Upland
                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INTERPRO; IPR001627; -.
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                                                                                                                                                                                                                                                                                                                                         510
                                                                                                                                                                                                                                                                                                                                                               6
                                                       BODIES.
SIMILARITY:
                                                                            SUBCELLULAR
                                            CONVICILIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO THE SEMAPHORIN FAMILY.
SIMILARITY: CONTAINS 1 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: SUBCELLULAR LOCATION: STRONG BINDING THIRD OF THE PROTEIN.
                      SWISS-PROT entry
                                                                                                                                                                                                                                                                                                                                         AQLPLHRC----
                                                                                                                                                                                                                                                                                                                                                              AQRCLQSCQQEPDDLKQKACESRCTKLEYDPRCVYDTGATNQRHPPGERTRGRQ
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19; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s requires a license agreement (See http://www.isb-sib.ch/announce/
an email to license@isb-sib.ch).
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 Swiss Institute
Bioinformatics
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                                                                                                                                                         N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein;
                                                                                                                                                                                                                                                                                  STANDARD;
                                            TO OTHER 7S CONGLYCININ,
                                                                             LOCATION:
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                                                                                                                                                                              Gossypium
                      is copyright.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 domain; Multigene family; Neurogenesis;
                                                                            COTYLEDONARY MEMBRANE-BOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                            MW;
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G TO NEUROPILIN IS MEDIAT
                                                                                                                                                                                                               cotton)
                                            SEED,
                                                                                                                                                                                                                                                                                                                                                                                    Score 66.5; DE Pred. No. 3.5; 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARG/LYS-RICH (BASIC).
BY SIMILARITY.
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N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
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        ght It is produced through a collaboration
Bioinformatics and the EMBL outstation -
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OBULIN A).
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                                                     (PHASEOLIN,
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(POTENTIAL).
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                                                       VICILIN,
                                                                            PROTEIN
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                                                                                                                                                                                                                                                                                J. Biol Chem. 264:14605-14608(1989).

11- FUNCTION: THIS RECEPTOR PROBABLY BINDS AN INSULIN RELATED AND HAS A TYROSINE-PROTEIN KINASE ACTIVITY.

11- CATALYTIC ACTIVITY: ATP + A PROTEIN TYROSINE = ADP + PROTEIN TYROSINE PHOSPARTE.

11- SUBUNIT: PROBABLE TETRAMER OF 2 ALPHA AND 2 BETA CHAINS LIDISULFIDE BONDS. THE ALPHA CHAINS CONTRIBUTE TO THE FORMAT THE LIGAND-BINDING DOMAIN, WHILE THE BETA CHAIN CARRY THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRR_CAVPO STANDARD; PRT; 1300 AA. P14617; 01-APR-1990 (Rel. 14, Created) 01-APR-1990 (Rel. 14, Last sequence update) 01-NOV-1997 (Rel. 35, Last annotation update) INSULIN RECEPTOR RELATED PROTEIN PRECURSOR (EC. IR-RELATED RECEPTOR).
                                                                                                                                  between the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There use by non-profit institutions as long as a modified and this statement is not removed. Us
                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE=89359245; PubMed=2768234; Shier P., Watt V.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                    EMBL; J05047; AAA37044.1;
PIR; A36502; A36502.
HSSP; P06213; 1IRK.
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                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration
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PFAM; PF00546; Seedstore_7s;
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                                                                                                                                                                                                                                                                                                                                                                                                          "Primary structure of a putative receptor for a ligand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             102 CEQSCREQYEKQQQQQPD---KQFKECQQRCQWQEQRPERKQQCVKECREQYQEDPWKGER 159
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IPR000494; -. IPR000719; -. IPR001245; -. IPR001777; -.
                                                                                                     equires a license agreement (See http://www.isb-sib.ch/announce/email to license@isb-sib.ch).
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Hystricognathi; Caviidae;
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                                                                                                                                                                                        _GOSHI
_GOSHI STANDARD; PRT; 588 AA.
P09801;
01-MAR-1989 (Rel. 10, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
VICILIN C72 PRECURSOR (ALPHA-GLOBULIN B).
Gossypium hirsutum (Upland cotton).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
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NP_BIND
BINDING
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      SEQUENCE FROM N.A.
Chlan C.A., Pyle J.B., Legocki A.B., Dure
"Developmental biochemistry of cottonseed
"Developmental biochemistry of cottonseed
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PRINTS; PR00014; FNTYPEIII.

PRINTS; PR00109; TYRKINASE.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

PROSITE; PS00239; RECEPTOR_TYR_KIN_II; 1.

PROSITE; PS00239; RECEPTOR_TYR_KIN_II; 1.

PROSITE; PS00239; RECEPTOR_TYR_KIN_II; 1.

PROSITE; PS050011; PROTEIN_KINASE_DOM: 1.

Transferase; Tyrosine-protein kinase; Receptor; Transmembrane; Glycoprotein; ATP-binding; Phosphorylation; Repeat; Signal.
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31.1%;
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Best Local Similarity
Matches 18; Conser
                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=97470885; PubMed=9331345;
Taniguchi M., Yuasa S., Fujisawa
                                                                                                                                                                                       Neuron
[2]
                                                                                                                                                                                                                       Pueschel A.W., Adams R.H., Betz H.;
"Murine semaphorin D/collapsin is a member of a dive
and creates domains inhibitory for axonal extension.
                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                008665; 062180; 062215;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence up
30-MAY-2000 (Rel. 39, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the storage protein families.";
Plant Mol. Biol. 7:475-489(1986).
-:- FUNCTION: SEED STORAGE PROTEIN.
-:- SUBCELLULAR LOCATION: COTYLEDONARY MEMBRANE-BOUND VACUOLAR PROTEIN BODIES.
-:- SIMILARITY: TO OTHER 7S SEED STORAGE PROTEINS (PHASEOLIN, VICILIN, CONVICILIN, CONGLYCININ, ETC.).
 TISSUE=FETAL BRAINEDLINE=95267432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOUSE
                                   SEQUENCE OF 107-772 FROM
                                                                   peripheral nerve project
Neuron 19:519-530(1997).
                                                                                                                                                                                                                                                                          MEDLINE=95267431; PubMed=7748561;
                                                                                                                                                                                                                                                                                              STRAIN-NMRI;
                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                SEMAJA OR SEMAD OR
                                                                                                                                                                                                                                                                                                                                                                                                                                  SEMAPHORIN 3A PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SM3A_MOUSE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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the European Bioinformatics Institute
                                                                                                   "Disruption
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; A30838; FWCNAB.
HSSP; P50477; 1CAX.
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                                                                                   of semaphorin III/D
nerve projection.";
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                   BRAIN;
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     PubMed=7748562;
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(SEMAPHORIN III) (SEMAPHORIN D)
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tute of Bioinformatics
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Pred. No. 5
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; 63E699B29AB8ADEB CRC64;
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Sciurognathi; Muridae;
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RESULT 1
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DOMAIN
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Neuron 14:949-959(1995).

-i- function: play A Role IN GROWTH CONES GUIDANCE. MAY FUNCTION TO PATTERN SENSORY PROJECTIONS BY SELECTIVELY REPELLING AXONS THAT NORWALLY TERMINATE DORSALLY.

-i- SUBCELLULAR LOCATION: SECRETED.

-i- DEVELOPMENTAL STAGE: EXPRESSED EARLY IN EMBRYONIC DEVELOPMENT (E11) IN DISTINCT REGIONS OF THE NEUROECTODERM AND MESODERM.

EXPRESSION BECAME MORE EXTENSIVE AT LATER STAGES.
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EMBL; D85028; BAA19773.1;
EMBL; L40484; AAA73934.1;
MGD; MGI:107558; SEMA3A.
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Goodman C.S., Kolo
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN: STRONG BINDING THIRD OF THE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              al; Immunoglobulin domain; Multigene family; Neurogenesis;
lopmental protein; Glycoprotein.
AL 20 POTENTIAL.
AL 21 772 SEMAPHORIN 3A.

IN 21 772 SEMAPHORIN 3A.

IN 643 730 IG-LIKE C2-TYPE DOMAIN.
IN 728 770 ARG/LYS-RICH (BASIC).

LIN 650 723 N-LINKED (GLCNAC. . .) (POTENTIAL).

OHYD 53 53 N-LINKED (GLCNAC. . .) (POTENTIAL).

OHYD 125 125 N-LINKED (GLCNAC. . .) (POTENTIAL).

OHYD 591 591 N-LINKED (GLCNAC. . .) (POTENTIAL).

LICT 193 193 D -> N (IN REF. 1).

LICT 207 207 H -> D (IN REF. 1).

LICT 253 253 D -> G (IN REF. 1).

LICT 403 403 A -> G (IN REF. 1).

LICT 571 572 EFERENCE IN REF. 1).

LICT 571 572 FERENCE IN REF. 1).
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18; Conserv
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non-profit institutions as long as its content
and this statement is not removed. Usage by an
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N-N (IN REF. 3)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=97073089; PubMed=8915837; Giger R.J., Wolfer D.P., De Wilt G.M.J., Verhaagen J.; "Anatomy of rat semaphorin III/Collapsin-1 mRNA expression and relationship to developing nerve tracts during neuroembryogenes J. Comp. Neurol. 375:378-392(1996).
                                                                                                                                                                                                                                                      SEQUENCE
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SIMILARITY: BELONGS TO THE SEMAPHORIN FAMILY.
SIMILARITY: CONTAINS 1 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEVELOPMENTAL STAGE: AT E-11, EXPRESSION WAS RESTRICTED TO THE OLFACTORY PIT, THE BASAL AND ROSTRAL SUFFACE OF THE TELENCEPHALIC VESICLE, THE EYE ANLAGE, THE EPITHELIUM OF RATHKE'S POUCH, AND SONITES. AT LATER DEVELOPMENTAL STAGES, IT WAS WIDELY DISTRIBUTED IN NEURONAL AS WELL AS IN MESENCHYMAL AND EPITHELIAL STRUCTURES OUTSIDE THE NERVOUS SYSTEM. AFTER BIRTH, MESENCHYMAL LEVELS DECREASED RAPIDLY AND EXPRESSION BECAME RESTRICTED TO SPECIFIC SETS OF NEURONS IN THE CNS. IN THE MATURE CNS, IT IS DETECTABLE IN MITRAL CELLS, NEURONS OF THE ACCESSORY BULB AND CEREBRAL CORTEX, CEREBELLAR PURKINGE CELLS, AS WELL AS A SUBSET OF CRANIAL AND CEREBELLAR PURKINGE CELLS, AS WELL AS A SUBSET OF CRANIAL AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FUNCTION: MAY BE INVOLVED IN GUIDING GROWING AXONS TOWARDS THARGETS BY FORMING A MOLECULAR BOUNDARY THAT INSTRUCTS AXONS ENGAGE IN THE FORMATION OF SPECIFIC NERVE TRACTS. BINDS TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPINAL MOTONEURONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEUROPILIN.
                                                                                                                                        AQRCLQSCQQEPDDLKQKACESRCTKLEYDPRCVYDTGATNQRHPPGERTRGRQ
                                                                                                             AQLPLHRC - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                          PF00047; ig; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           norvegicus (Rat).
ota; Metazoa; Chordata;
ia; Eutheria; Rodentia;
                                                                                                                                                                         . Similarity
18; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                          Immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR003006;
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240
643
728
650
650
125
125
591
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRONG BINDING TO NEUROPILIN IS MEDIATED BY THE CARBOXY
                                                                                                                                                                                                                                         1 protein; (1) 20 21 772 40 538 43 770 0 723 53 125 125 14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sema;
                                 STANDARD;
                                                                                                             -DIYGKACAECC--LARDPYCAWDGSSCSRYFPTAKRRTRRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        institutions as long as its content is in no way tatement is not removed. Usage by and for commercial license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                     18.5%;
33.3%;
    Created)
                                                                                                                                                                                                                                                                                                                                                                                                          domain; Multi
Glycoprotein.
                                                                                                                                                                                                                                                    MW;
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                                                                                                                                                                       ; Score 63.5; D; Pred. No. 7.5; 6; Mismatches
                                                                                                                                                                                                                                                                N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                              IG-LIKE C2-TYPE ARG/LYS-RICH (B! BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL
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                                                                                                                                                                                                                                                                                                                                                                                                                       Multigene family; Neurogenesis;
                                                                                                                                                                                                                                                    240907812FF9F2D2 CRC64;
                                                                                                                                                                                     63.5;
No. 7
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                                                                                                                                                                                                      Length 772;
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Best Local
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01-JUL-1993
01-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tuffnell P.S., Barrell B.G.;
"DNA sequence and expression of the Nature 310:207-211(1984).
                                 -!- PATHWAY: BRANCH-POINT REACTIONS BETWEEN GENERAL PHENYLPROPAL METABOLISM AND PATHWAYS LEADING TO VARIOUS SPECIFIC END PROPRIES SIMILARITY: TO OTHER ENZYMES WHICH ACT VIA AN ATP-DEPENDENT COVALENT BINDING OF AMP TO THEIR SUBSTRATE.
                                                                                                       J. Biol. Chem. 266:8551-8559(1991).
-!- CATALYTIC ACTIVITY: ATP + 4-COUMARATE + COA =
                                                                                                                                                                                                                                                                                                                                                                      _SOLTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Epstein-barr virus (strain B95-8) (Human herpesvirus Viruses; dsDNA viruses, no RNA stage; Herpesviridae; Cammaherpesvirinae; Lymphocryptovirus.
                                                                                                                                "Structural comparison, modes of expression, and elements of the two 4-commarate: COA ligase genee
                                                                                                                                                              Becker-Andre M., Schulze-Lefert P., Hahlbrock K.;
                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE=91217100;
                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Embryophyta; Trache
Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                        Solanum tuberosum (Potato)
                                                                                                                                                                                                                                                                         4CL-1.
                                                                                                                                                                                                                                                                                      4 - COUMARATE
                                                                                                                                                                                                                                                                                                                                           P31684;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Early protein. SEQUENCE 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gibson
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; V01555; CAA24880.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=84270667;
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                                                                                           4 - COUMAROYL - COA
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Bankier A.T., Bi
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                                                                                                                                                                                                                   Solanaceae;
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(Rel. 26, Last sequence update)
(Rel. 32, Last annotation update)
--COA LIGASE 1 (EC 6.2.1.12) (4CL)
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                                                                                                                                                                                                                                                                                                                                                        STANDARD;
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A.T., Biggin M.D., Double G., Hudson G.S.,
                                                                                                                                                                          PubMed=2022667;
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34, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THAT GROUPS TOGETHER EBV BFRF2,
                                                                            BETWEEN GENERAL PHENYLPROPANOID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B95-8 Epstein-Barr virus genome.
                                                                                                                                                                                                                                                                                                                                                        545
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                                                                                                                                                                                                                             Tracheophyta; Spermatophyta; dicots; Asteridae; euasterids
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RESULT 13
4CL2_SOLTU
                             RESULT 14
SM3D_HUMAN
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Best Local
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01-JUL-1993
01-NOV-1995
SM3D_HUMAN 095025;
                                                                                                                                                                                                                              INTERPRO; IPRO0873; -.
PFAM; PF00501; AMP-binding; 1.
PROSITE; PS00455; AMP_BINDING; 1.
Ligase; Phenylpropanoid metabolism; Multigene family.
SEQUENCE 545 AA; 59625 MW; 5481F0B0AFEA39E0 CRC64;
                                                                                                                                                                                                                                                                                                             COVALENT BINDING OF AMP TO THEIR SUBSTRATE PIR; B39827; B39827.
HSSP; P08659; ILCI.
                                                                                                                                                                                                                                                                                                                                                                                                                       "Structural comparison, modes of expression, and putative cis-acting elements of the two 4-coumarate: CoA ligase genes in potato.";
J. Biol. Chem. 266:8551-8559(1991).
-:- CATTIVITY: ATP + 4-COUMARATE + COA = AMP + PYROPHOSPHATI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Embry Magnoliophyta; eudicotyledons; Solanales; Solanaceae; Solanum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=91217100; PubMed=2022667;
Becker-Andre M., Schulze-Lefert P., Hahlbrock K.;
                                                                                                                                                                                                                                                                                                                                                             -!- PATHWAY: BRANCH-POINT REACTIONS BETWEEN GENERAL PHENYLPROPANOID METABOLISM AND PATHWAYS LEADING TO VARIOUS SPECIFIC END PRODUCTS -!- SIMILARITY: TO OTHER ENZYMES WHICH ACT VIA AN ATP-DEPENDENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Solanum tuberosum (Potato).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PFAM, PF00501; AMP-binding; 1.
PROSITE; PS00455; AMP_BINDING; 1.
Ligase; Phenylpropanoid metabolism; Multigene family.
SEQUENCE 545 AA; 59619 MW; DE183683B774BA71 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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HSSP; P08659; 1LCI.
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                                                                                          343 PVLAMCL-AFAKEPFDIKSGACGTVVRNAEMKIVDP----
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                                                                                                                        4 PCAQRCLQSCQQEPDDLKQKACESRCTKLE---YDPRCVYDTGATNQRHPPGE 53
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19; Conserv
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(Rel. 26, Last sequence update)
(Rel. 32, Last annotation update)
--COA LIGASE 2 (EC 6.2.1.12) (4CL)
                                                                                                                                                         Conservative
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              STANDARD;
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35.8%;
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dons; core eudicots; Asteridae; euasterids I;
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Pred. No. 10;
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RESULT 15
PGBM_HUMAN_H
PGBM_H
AC P98160
DT 01-OCT
DT 01-CT
DT 15-JUL
DE BASEME
DE PROTEEL
GN HSPG2.
OS Homo s
OC Eukary
OC Mammal
RN [1]
RP SEQUEN
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CARBOHYD
SEQUENCE
                                                                                                                                             PGBM_HUMAN STANDARD; PRT; 4393 AA.

P98160; Q16287;
P98160; Q16287;
Q1-QCT-1996 (Rel. 34, Created)
Q1-QCT-1996 (Rel. 34, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
BASEMENT MEMBRANE SPECIFIC HEPARAN SULFATE PROTEOGLYCAN CORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PFAM; PF00047; ig; 1.
Signal; Immunoglobulin domain; Multigene
Signal; Immunoglobulin domain; Multigene
DOTENTIAL.
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30-MAY-2000
30-MAY-2000
                                            Homo sapiens (Human).
Eukaryota; Metazoa; C
Mammalia; Eutheria; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INTERPRO;
INTERPRO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the property of the p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human
Finkaryota; Metazoa;
    SEQUENCE FROM N.A
                                                                                                                                  PROTEIN PRECURSOR (HSPG) (PERLECAN) (PLC).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mitted (JUN-1998) to the EMBL/GenBank/DDBJ databases. FUNCTION: INDUCES THE COLLAPSE AND BARALYSIS OF NEURONAL GROWTH CONES. COULD POTENTIALLY ACT AS REPULSIVE CUES TOWARD SPECIFIC NEURONAL POPULATIONS. BINDS TO NEUROPILLN (BY SIMILARITY). SUBCEELLULAR LOCATION: SECRETED (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY: BELONGS TO THE SEMAPHORIN FAMILY. SIMILARITY: CONTAINS 1 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN: STRONG BINDING TO NEUROPILIN IS MEDIATED BY THE THIRD OF THE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                    QLSLHRC----DTYGKACADCC--LARDPYCAWDGNACSRYAPTSKRRARRQ 573
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18; Conservative
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IPR001899;
IPR003006;
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39, Last :
39, Last :
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Primates;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IG-LIKE C2-TYPE DOMAIN.
ARG/LYS-RICH (BASIC).
BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .)
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4; Mismatches
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Pred. No. 16;
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                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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TISSUE-SKIN, AND COLON;

MEDLINE-92235084; PubMed=1569102;

Murdoch A.D., Dodge G.R., Cohen I., Tuan R.S., Iozzo R.V.;

Murdoch A.D., bodge G.R., Cohen I., Tuan R.S., Iozzo R.V.;

"Primary structure of the human heparan sulfate proteoglycan from basement membrane (HSPG2/perlecan). A chimeric molecule with multiple domains homologous to the low density lipoprotein receptor, laminin, neural cell adhesion molecules, and epidermal growth factor.";

J. Biol. Chem. 267:8544-8557(1992).
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                                                                                                                   This
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[5]
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[4]
                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-21 FROM N.A.
MEDLINE-94052171; PubMed-8234307;
MEDHONE-94052171; PubMed-8234307;
Cohen I.R., Graessel S., Murdoch A.D., Iozzo
"Structural characterization of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dodge G.R., Kovalszky I., Chu M.L., Hassell J.R., McBride O.W., Yi H.F., Iozzo R.V.;
"Heparan sulfate proteoglycan of human colon: partial molecular cloning, cellular expression, and mapping of the gene (HSPG2) to the
                                                                                                                                       SUBSTRATE FOR CELLS.

SUBCHAIT: BURIFIED PERLECAN HAS A STRONG TENDENCY TO AGE DIMERS OR STELLATE STRUCTURES.

I SUBCELLULAR LOCATION: EXTRACELLULAR.

I TISSUE SPECIFICITY: FOUND IN THE BASEMENT MEMBRANES.

I TISSUE SPECIFICITY: FOUND IN THE BASEMENT MEMBRANES.

I SIMILARITY: CONTAINS THEEE HEPARAN SULFATE CHAINS AS WELL AS N AND O-LINNED OLIGOSACCHARIDES.

SIMILARITY: CONTAINS 4 LDL-RECEPTOR CLASS A DOMAINS.

SIMILARITY: CONTAINS 10.5 LAMININ EGF-LIKE DOMAINS.

SIMILARITY: CONTAINS 3 LAMININ DOMAINS IV.

SIMILARITY: CONTAINS 3 LAMININ G-LIKE C2-TYPE DOMINES.

SIMILARITY: CONTAINS 3 LAMININ G-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                its promoter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       assignment of the gene (HSPG2)
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"Cloning of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kallunki P.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-FIBROSARCOMA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 892-1398
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Kallunki P., Tryggvason K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BamHI restriction fragment length anomics 11:389-396(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w density lipoprotein receptor, laminin, neural cell adhesion decules, and epidermal growth factor.";

Cell Biol. 116:559-571(1992).
                                                                                        ween the Swiss Institute of Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                  C. Natl. Acad. Sci. U.S.A. 90:10404-10408(1993).

EUNCTION: THIS PROTEIN IS AN INTECRAL COMPONENT OF BASEMENT
MEMBRANES. IT IS RESPONSIBLE FOR THE FIXED NEGATIVE ELECTROSTATIC
CHARGE AND IS INVOLVED IN THE CHARGE-SELECTIVE ULTRAFILTRATION
PROPERTIES. IT INTERACTS WITH OTHER BASEMENT MEMBRANE COMPONENTS
SUCH AS LAMININ AND COLLAGEN TYPE IV AND SERVES AS AN ATTACHMENT
                                                                                                   SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
 х62515;
м85289;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n of human chromosome 10:673-680(1991).
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Eddy R.L., Byers M.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tryggvason K
 CAA44373.1;
AAA52700.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sulfate proteoglycan core protein, SPG2) to 1p36.1-->p35 and identification ent length polymorphism.";
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1.";
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PEAM; PRO0054; Laminin_G; 3.

PEAM; PE00057; ldl_recept_a; 4.

PRINTS; PRO0010; EGFBLOOD.

PROSITE; PS00022; EGF_1; 9.

PROSITE; PS01186; EGF_2; 5.

PROSITE; PS01248; LAMININ_TYPE_EGF; 1.

PROSITE; PS501068; LDLRA_2; 4.
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PEAM: PF001390;
PFAM: PF00052;
PFAM: PF00053;
PFAM: PF00054;
PFAM: PF00054;
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DO
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sulfate; Laminin E
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IPR000082; ...
IPR000561; ...
IPR001438; ...
IPR001791; ...
IPR002172; ...
IPR002172; ...
IPR003006; ...
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IPR000082;
IPR000561;
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laminin_B;
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laminin_G; 3.
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EGF-like domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN II (4 LDLRA REPEATS).

DOMAIN II A (1 IGG-REPEAT).

DOMAIN III (SIMILAR TO SHORT ARM OF LAMININ A CHAIN).

DOMAIN IV (SIMILAR TO NEURAL CELL ADHESION MOLECULE; 21 IGG REPEATS'
DOMAIN V (C-TERMINATION).
ALPHA CHAINS AND EGP.

LDL-RECEPTOR CLASS A 1.
LDL-RECEPTOR CLASS A 2.
LDL-RECEPTOR CLASS A 3.
LDL-RECEPTOR CLASS A 3.
LDL-RECEPTOR CLASS A 3.
LDL-RECEPTOR CLASS A 3.
LAMININ EGF-LIKE 1 (C-TERLAMININ EGF-LIKE 1 (C-TERLAMININ EGF-LIKE 2.
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LAMININ EGF-LIKE 11.
LAMIN
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  IN EGF-LIKE 1 (N-TERMINAL).

IN EGF-LIKE 1 (C-TERMINAL).

IN EGF-LIKE 2.

IN EGF-LIKE 3.

IN EGF-LIKE 4 (INCOMPLETE).

IN EGF-LIKE 5 (N-TERMINAL).

IN EGF-LIKE 5 (N-TERMINAL).

IN EGF-LIKE 6.

IN EGF-LIKE 6.

IN EGF-LIKE 7.

IN EGF-LIKE 9 (N-TERMINAL).

IN EGF-LIKE 9 (N-TERMINAL).

IN EGF-LIKE 10.

IN EGF-LIKE 10.

IN EGF-LIKE 10.

IN EGF-LIKE 10.

IN EGF-LIKE 11.

KE C2-TYPE DOMAIN 2.

KE C2-TYPE DOMAIN 3.

KE C2-TYPE DOMAIN 4.

KE C2-TYPE DOMAIN 6.

KE C2-TYPE DOMAIN 7.

KE C2-TYPE DOMAIN 7.

KE C2-TYPE DOMAIN 9.

KE C2-TYPE DOMAIN 9.
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